

N. Ramamathan

NCPA  
JOURNAL  
OF  
THE

arts

*Volume XVIII No. 1 December 1992*

## CONTENTS

Editorial .. .. .	1
Vijaya Mehta Interviewed by Dr. Vijaya Rajadhyaksha and Prof. Mahesh Elkunchwar—Part I .. .. .	2
Guru Kittappa: Understanding Bharata Natyam—Sucheta Chapekar .. .. .	25
Physics of <i>Tanpura</i> : Some Investigations—Dr. H. V. Modak .. .. .	32
Book Reviews .. .. .	42
N. C. P. A. News .. .. .	49

The contributors to this number include:

Dr. Vijaya Rajadhyaksha, Head, Dept. of Post-Graduate Studies, S.N.D.T. University, Bombay.

Sucheta Chapekar, Bharata Natyam dancer, whose main field of study is the contribution of the Maratha rulers of Tanjavur to art.

Dr. H. V. Modak, recipient of the National Award for developing an automatic musical instrument; scientist, N. C. P. A.

Shama Bhate, Kathak dancer, presently Director, Nad-Roop (a school of Kathak dance and music), Pune.

Padma Rangachari, musician and researcher in Karnatic music.

\* \* \*

*Annual Subscription (three issues):*

In India	—	Rs. 50 for Members
		Rs. 75 for non-members
		Rs. 100 for institutions
Foreign	—	\$ 20 (air mail)
		\$ 15 (sea mail)

*Single Issue:*

In India	—	Rs. 20 for Members
		Rs. 30 for non-members
		Rs. 40 for institutions
Foreign	—	\$ 7 (air mail)
		\$ 6 (sea mail)

Payments should be made by money order, bank draft or cheque in favour of the National Centre for the Performing Arts.

\* \* \*

Editor: Dr. Ashok D. Ranade.

Publications Officer: Hilda S. Darukhanawalla.

Published by J. J. Bhabha for the National Centre for the Performing Arts, Bombay.

Printed by A. S. Vadiwala at the Tata Press Ltd., 414, Veer Savarkar Marg, Bombay 400 025.

\* \* \*

The views expressed in the N. C. P. A. Journal of the Arts are those of the authors and do not necessarily conform to the views of the publishers. Permission to reproduce, in whole or part, any material published in this Journal must be obtained from The Editor, N.C.P.A. Journal of the Arts, National Centre for the Performing Arts, Nariman Point, Bombay 400 021.

## Editorial

We are happy to approach readers in our renewed attempt to create a platform for exchanging ideas on arts, life and culture. The new name of the Journal reflects the expanding range of our activities. The diverse activities have, however, one aim in common:

"To reach persons and institutions holding firm to the belief that culture is caring for excellence—and not in arts alone!"

Culture does not deny stratification in a society but encourages greater circulation of ideas and influences among the strata!

Arts do not enjoy a monopoly of excellence but are without a parallel in their capacity to store, multiply and disseminate excellence.

Life is not monopolized by arts but it hankers after meaningful moments provided abundantly and without strings by arts.

We invite readers, scholars, artists and all to join hands in the exciting venture!

—ASHOK D. RANADE

# Vijaya Mehta

Interviewed by Dr. Vijaya Rajadhyaksha and Prof. Mahesh Elkunchwar

Vijaya Mehta, recipient of the prestigious "Kalidas Samman" for 1991-92 instituted by the Government of Madhya Pradesh, was interviewed in two parts for the archives of the Theatre Development Centre, N.C.P.A. by Dr. Vijaya Rajadhyaksha and Prof. Mahesh Elkunchwar. Excerpts from the first part are published here.

## Part I

**Vijaya Rajadhyaksha:** So you have crossed the fifties?

**Vijaya Mehta:** Yes. On the 4th of November 1987 I completed 54 years!

**V.R.:** If I grant that human memory begins from the tenth year, you would have very clear memories from 1943 onwards. Can you tell us something about your childhood and the period from 1943?

**V.M.:** I have earlier memories in the form of images, but the period you refer to is generally known as the Pre-Independence... First memory I have is when I was in the second standard... There were many 'white' soldiers... moving about in jeeps and tanks and also making the V-signs... At the age of five or six we wanted to do something thrilling and we used to show a Q-sign to the soldiers! I do not know whether they understood the meaning of this... We ourselves used to run away immediately after making the Q-sign, which naturally meant Quit India... I also remember the distribution of pamphlets and getting frightened that the police would catch us... This must have been when I was five years old... The news would be, "Gandhiji has been arrested", or "Nehru has been put into jail" or "Nehru has been holding a rally"... Such themes hover in my memory... In those times the atmosphere was political, whether you understood it or not. In every home Nehru, Vallabhbhai Patel, Abdul Ghaffar Khan were the personalities discussed and read

about... just as people discuss today Amitabh Bachchan or star gossip etc. I feel that all this suggested a social responsibility which existed in every field at that time.

**V.R.:** Did you have at home an atmosphere conducive to this sense of social responsibility?

**V.M.:** My father... I lost him when I was five years old. My uncle was a Varkari, always accompanied by a few devotees. At the time of food they used to mix up everything to prepare a *Kala*. I never understood at that time what it was. We were... religious but not exactly religious! We were superstitious. My people used to believe that one of my aunts used to do black magic! If the coals on the *chula* would burn too brightly, it was considered ominous! My mother used to believe that this had happened a week before I lost my father. When I lost my brother later, a similar brightening up was noticed. So they were religious but with a lot of fear in them. I do not remember my uncle arguing with anybody about Hinduism or Varkari cult etc.

**V.R.:** They must have emphasised the ritual part?

**V.M.:** Yes, now I understand that. If the lamp got extinguished during the Navratra-days one had to take a bath. If a lizard fell on your body you had to prepare a lizard of jaggery... All this was counterbalanced by the Karnik family i.e. the family of my aunt (mother's sister)...

The deaths which followed in quick succession, must have brought about this deep fear and I developed a sense of insecurity. My aunt and her husband, Mr. Karnik, brought me out of this emotional and intellectual insecurity. Mr. Karnik was a radical humanist, and was not superstitious. He would say, "We are thinking beings, everything must be thought about logically and acted upon accordingly". I did not fully follow what he said but he convinced me that superstition can only be superstition. As a result I used to come home and raise the question, "The *naivedya* distributed after the worship, why

should it not be given to the servant, a *rama* working with us? Is he not a human being?" I started posing such questions from the age of 7-8. This was a consequence of the atmosphere at home being counterbalanced by the Karniks.

Yet another strand was provided by the family of one of my cousins namely Nalini Jaywant, Shobhana Samarth etc. I used to spend a lot of time in my childhood with this family. Firstly, because our house was grief-stricken due to successive deaths. Nalini used to call me over. Nutan (Shobhana's daughter) and I were of the same age and spent a lot of time together. However, I never felt like joining films. I used to dance and Nalini always remarked that I danced very well. Do you know that when I was in school we had a programme in aid of the Bengal Relief Fund, I gave a dance item and Shrikant Thackeray, Shri Balasaheb Thackeray's brother, had accompanied me on the violin! My mother came to know of it and was horrified. She felt I would also join the film industry following in the footsteps of Nalini. Thus everything was put to a stop.

**V.R.:** Does that mean you did not have enough freedom?

**V.M.:** I do not think so. All these were minor matters. In fact I was everybody's darling and special treatment was given to me as they felt sorry for the loss of my father and elder brother. Also I was always smiling, used to do a lot of funny things. I was always surrounded by people and never felt lonely.

**V.R.:** School days?

**V.M.:** I changed schools very frequently but St. Columba was the main school. This high school and all the radical humanists—M. N. Roy, G. D. Parikh, Laxman Shastri Joshi, Tarkunde etc.—visiting the Karnik family, together influenced me a lot. These people carried on discussions in English and we had Catholic teachers, so to speak in English was important. I never thought it difficult.

I passed my S. S. C. in 1948. From the fifth standard I was in Rashtra

Seva Dal because of Sudha Varde, Pramila Dandavate and others. For about four years that was my interest.

**V.R.:** How would you describe experiences from your Rashtra Seva Dal period?

**V.M.:** Acharya Bhagwat was in the lead. One of our activities was to collect funds for "Sadhana", a periodical run by the late Sane Guruji. The idea hammered into us was that time should not be wasted. The most important work was to create a new society... Till then I used to wear trousers and play cricket with my brothers! Once the play was over, I would immediately say to myself, "I should not have wasted my time". Thus from playing cricket I suddenly reached a phase where I began wearing *khadi*! My mother received a shock of her life. I used to play cricket but in *khadi*. I was convinced that wearing good clothes only gave one a personal satisfaction. People never really looked at you. I wanted to prove this. One day I carried a big ink blot on my white *khadi* sari and went to the Wilson College without wearing *chappals*. I could see that nobody had noticed. I concluded that foppishness etc. is to be avoided. I must say that all these ideas given to me by the Rashtra Seva Dal-atmosphere contributed a lot. All the Seva Dal workers were affectionate. Bhausaheb Ranade regarded me as his daughter... Seva Dal taught me the dignity of labour. No work is demeaning. Some jobs are to be done and some acts are to be avoided—this sort of a rigid view was destroyed. We even cleaned the gutters!

**V.R.:** You were good-looking... your parents must have thought of marriage. Did your mother like your style of living?

**V.M.:** You may be aware that I had written a letter to Jayprakash Narayan because the atmosphere in my house became intolerable to me. I wanted to join him. Jayprakash Narayan directed me to Bhausaheb Ranade. Bhausaheb Ranade came to our house and slapped me! I was hardly 14 or 15 because I had passed my S. S. C. at the young age of 13. I was haunted by ideas and I am sure my mother and brother must have passed sleepless nights! The Karnik

family supported me. They said, "If she is keen on doing this work (Seva Dal work), let her do it. The more you oppose her the more fiery she would become!"

Surprisingly, the same Karniks were responsible for destroying my devotion to the Seva Dal. Mr. Karnik once asked me, "If you are a volunteer of Seva Dal, a person engaged in social reconstruction, how can you take part and sing for the gatherings of the Praja Socialist Party?" I said, "I do not belong to any party." Karnik insisted, "You are being already channelized into a wing of a party and I do not think you should allow that to happen at this young age". ...It was nearly an overnight end to my interest in the Seva Dal. The next day I told my mother, "I want some money". I went to the Taj Mahal Hotel and had my hair cut. I went to the school with a bob-cut. At that time many Sindhi cloth merchants used to sell colourful large prints. I began wearing them... Even today my ties with the Seva Dal are not entirely severed. I like the Seva Dal people, I feel they are my people. It must be all the unspent energy that I had which prompted me to take part in many extra-curricular activities in the Wilson College, when I was in Junior B. A. class.

Perhaps due to the Rashtra Seva Dal influence I opted for Politics and Economics. However, my attraction for social reconstruction had tempered down and the subjects proved boring for me. The professors for my subjects went on advising me how to study, how to take notes etc. But four professors I remember as ideal: Prof. W. L. Kulkarni (Wa. La.), Prof. R. Choksi, Prof. Velankar and Prof. Lavande. Wa. La. and I became very close. It was he who first convinced me that I can act in a play. In a function for the Marathi Vangmaya Mandal (Marathi literary society), I participated in a play-reading. Wa. La. praised me and invited me to participate in a play. I did so. Prof. Choksi taught us "Sohrab and Rustom". He used to say, "I want you to understand the meaning of the poem and hence I will read it out to you". He read that to us and I still carry memories of his class. The reading was full of emotion and I do not think he taught in any other way... I never liked Sanskrit but Prof. Velankar was a phenomenon. One Prof. Gadgil taught us grammar

and I was bored. Prof. Velankar taught us *Meghadootam* and *Vikramorvasiyam*. When he touched the grammar portion, I was foxed but Prof. Velankar with his *pheta*, *dhoti* and aged face got so involved in the poetry that for us it became Velankar's *Meghadootam* and not Kalidasa's *Meghadootam*!

**V.R.:** It is interesting that you worked later in Marathi, English and Sanskrit Theatre. Does this have any connection with your college education?

**V.M.:** Yes, to some extent, in a rather forced manner.

**V.R.:** You were close to Wa. La. and yet you remained closer to the English language than to the Marathi. How would you explain this?

**V.M.:** Perhaps, because I did not remain in close touch with Wa. La. for a long period. After participating in a college play, the next step was the Bharatiya Vidya Bhavan competitions. From there I was picked up by the Sahitya Sangh... Thus I was engaged entirely in Marathi Theatre. I had finished my B. A. at the age of 17. While doing my M. A. I met Alkazi. That must have prompted me to be more inclined towards English.

**V.R.:** I feel that I would need a more sequential statement from you in this matter.

**V.M.:** After Wilson College I took part in the Intercollegiate competition. The play was directed by Daji Bhatavdekar and it won a prize. Thus I was taken up by the Sahitya Sangh which gave me a boost. I arrived when I was barely 17! *Jhunjharrao* (adaptation of *Othello*) was under production. Nanasaheb Phatak and Snehaprabha Pradhan were the main artistes. There were some clashes and Snehaprabha Pradhan walked out just five days before the first performance. Daji Bhatavdekar recommended me. In four days I learnt my role. This must be around 1952-54.

While doing my M. A. I was working with P. D. Shenoy who was Alkazi's associate. He was a member of the Theatre Group founded



by Alkazi. I enacted a part from *Othello* with him. Alkazi saw it and offered to train me formally on the condition that I stopped acting in Sahitya Sangh productions till I finished training with him. This created a furor in the Sangh. Dr. Bhalerao and others were very much annoyed. I, however, held firmly to Alkazi's suggestion because I felt the need to be trained. Shenoy convinced me about the need for training. In fact I gained more from Shenoy than from Alkazi e.g. Shenoy introduced me to method in acting. He said that in order to sharpen one's sensibilities it was necessary to respond to music or painting rather than *knowing* music or painting. I gradually felt more inclined to undergo training. For nearly three years I left Marathi theatre and joined the English. All others in the group would come in their cars. They would talk about the most fashionable dresses and their trips to London and Paris... I was the only person speaking Marathi... Due to Shenoy and Alkazi I read a lot... Alkazi's method was thorough. If we were to do a Greek play, he would ask us to read on Greek drama, Greek theatre, Three Unities and he would give us a bibliography. I did *Bernarda Alba* and Sartre's *No Exit*. Whatever the play may be we were to get familiarized with the period. He felt that movements should be composed and sculptural in nature. He insisted on a texture as if in a painting. At that time Alexander Calder was exhibiting in Bombay. His mobile sculptures were well-known. Alkazi drew our attention to the fluidity that came through the mobiles...

I was not totally cut off from the Marathi theatre and personalities. I used to go to Mama Varerkar's house every Saturday. There I used to meet many literary figures. But the reading was mainly related to the English theatre. I began appreciating English musicals. All this was due to Shenoy... I could not understand what was symphony and such other matters. I was exposed to a great deal... After two years or so I returned to the Sahitya Sangh. While working with Alkazi, I was not sure whether I would be effective in English theatre. Shenoy also felt the same about me. One Mrs. Babington was engaged to improve my diction. Shenoy used to comment — "Most of your energy is spent in how to speak good English and how to walk in a unfamiliar costume. As an actor I do not see the inner flow."

I agreed with him. I told him, "I feel comfortable in Marathi theatre". After two years I took a decision to come back to Marathi theatre and felt a great relief. By the time I left Theatre Group it had become Theatre Unit! The parting was not happy. Alkazi wanted to stop me. However, with Soli Batliwalla's help I could do what I wanted to.

After coming back to the Sangh-fold I began working in Sahitya Sangh as well as in Bharatiya Vidya Bhavan. Dr. Bhalerao treated me as his daughter. When my brother had raised objection about my working with 'professionals' because I was unmarried, Dr. Bhalerao had assured him that I was his responsibility. He saw to it that I was almost 'quarantined', isolated from the professionals. ...At the time of *Jhunjharrao*, Pange and Andhrutkar used to come and fetch me from my house. I would be escorted along the Girgaon Road by both till we reached the Sangh! During the rehearsals I was allowed to talk to the professionals but as soon as the rehearsals were over, I would go and sit near Dr. Bhalerao. At the time of performance, Mrs. Bhalerao would be in the greenroom. All the ornaments were acquired by Durgabai Khote from the *Mughal-e-Azam* property.

When I emerged from the greenroom Dr. Bhalerao would look me over and after having gained his approval, I would be escorted by him to the wings. I would make a beeline to the greenroom soon after my exit. I was allowed to talk to the seniors alone, hence I came in contact with Chintamanrao Kolhatkar, K. Narayan Kale, Keshavrao Date, Mama Pendse, Nanasaheb Phatak and Parshvanath Altekar. Altekar and Narayan Kale began frequenting our house. Both of them were thinkers. I had brought with me a lot of theoretical baggage from Alkazi. I believed that those who thought about Marathi theatre at that time were enthusiastic in exchanging ideas with me because very few persons were analytical about theatre then. Later I acted in *Sanshaykalol*, *Durga* and *Sawai Madhavravacha Mrityu*. My contacts with these personalities brought a portion of the history of Marathi theatre to me. ...Marathi theatre which I saw in reality was not satisfying. Every theatre has its golden age and Marathi theatre had its at the time of Bal Gandharva. The Marathi



Master Dattaram and Vijaya Jaywant in *Sawai Madhavravache Mrityu*.

Sangeet Rangbhoomi which we see even today is, as Peter Brook says, "a mere shell without any meaning in it." The acting and the structure it has, therefore, becomes boring. Rangnekar's plays were performed, but I found them too monotonous. I went to the Bharatiya Vidya Bhavan for a scholarship. I was awarded a scholarship and was also allowed to have Adi Marzban, instead of Alkazi, as a guide. He told me plainly, "Your theoretical talk is alright, your acting in Marathi theatre is also okay but you better start directing". So at the age of twenty, they gave me Tendulkar's *Shrimant* to direct for the Marathi section of the Bharatiya Vidya Bhavan. ...This was towards the end of 1955. Then the events moved very fast till 1959 when I got married. I was acting in P. L. Deshpande's plays. I also directed one-act plays by Tendulkar. I was connected with Indian National Theatre, Bharatiya Vidya Bhavan and Sahitya Sangh. Adi Marzban was my guide in the Indian Academy of Arts. In a little more than a year, I became the Registrar of that institution and *Shitu* was the first production.

All those who had gathered at the time of *Shrimant* used to meet often and discuss the desirability of forming a theatre group. I was reluctant to found a group and insisted on working with established institutions.

**V.R.:** You are associated with Durgabai Khote, who was an important person in the Sangh, did she train you in any way?

**V.M.:** To be frank with you, Durgabai was not my model. I respected her, admired her classical stature but did not like her acting in *Bhaubandki*. When I openly said this Mama Pendse remarked, "This girl has something in her if she can take this position (about Durgabai's acting)".

**V.R.:** Were you aware that Durgabai was to become your mother-in-law?

**V.M.:** You may say she was my teacher in Sahitya Sangh. She directed me for *Bhaubandki* and Shirwadkar's *Vaijyanti*. My brother



and mother were after me to get married. Karnik used to say, "She is only 19, let her complete her M.A.". Of course, I knew I was to get married. Various proposals were discussed but many a times interested parties would ask me whether I was ready to leave theatre. ...I used to cry and everything would start all over again. This continued for about five years. Bai (Durga Khote) understood the situation. She arranged a meeting between Hareen and me. Bai said, "Hareen has returned home after an absence of nearly 16 years and has hardly any friends. Take him to Sahitya Sangh." And we became friends. Many a times things happen even though we don't plan for them. My marriage with Hareen was one such event.

**V.R.:** At that time were you certain that theatre would be your career or expression? Did you fear that marriage might prove to be an obstacle?

**V.M.:** Now I think, yes. At that time I could not have pin-pointed the cause of my anxiety. I used to cry often because I felt that I was 'caught'. All my waking hours were spent in thinking about theatre. At that time we used to rehearse in the house of Prafulla Dahanukar's mother. Jitendra Abhisheki and Madhav Watve also used to stay there. In other words, my life was full of music, painting and theatre. Everybody, including my brother, told me that I was to get married into a very rich family that would allow me to do administration or planning of theatre but not acting. On the logical plane I would understand that, but the moment I tried to confront the idea, I felt like rebelling against it. ...Also because I was not clear about the relationship between theatre and life as an actuality. For example, I was acting and directing *Shitu*. All the time I felt my legs were thin and wondered how I could look like G. N. Dandekar's Shitu. I was upset and thought about it while sitting alone in the theatre. There were wings, curtains and darkness. I felt that this edifice must be commenting on my inability to do theatre and wanting me to get out of it! I felt very inferior and suddenly realized that I could use this inferiority complex itself to characterize Shitu. Thus I was able to connect life and theatre.

**V.R.:** I feel curious about one thing. You did a number of plays with Sahitya Sangh, did they ever invite you to direct their plays?

**V.M.:** Yes. My relations with the Sangh continued. Even now I feel it is my home.

**V.R.:** You were married to Hareen in 1959 and left for Jamshedpur. Did that interrupt your theatre work?

**V.M.:** From my side such an interruption was an impossibility. Moolgaokar at that time headed TELCO. When I told him that I was coming to Jamshedpur, he opened out the arts centre for me. We used to do theatre there. In addition, I produced plays in the summer vacation when I would come to Bombay. During my stay at Jamshedpur I produced *Chimnicha Ghar Hota Menacha* and *Uddhav* by Pendse (to be staged in Bombay). I was in Jamshedpur hardly for a year and a half. ...When I left Jamshedpur other people in my group i.e. Arvind Deshpande, Madhav Watve, Vijay Tendulkar, Arun Kakde etc. decided to found the institution called "Rangamanch". Madhav Watve was to direct Tendulkar's play. However, he expressed doubts about his ability to complete the assignment and so I took up the play when I came back. After my return to Bombay



Madhav Watve, Datta Bhat and Sharayu Bhopatkar in *Sasa ani Kasav*.

felt that now I could run the institution and "Rangayan" was established. *Sasa ani Kasav* was the first production of Rangayan though I felt that the true beginnings of Rangayan date back to the time we came together to produce *Shrimant*.

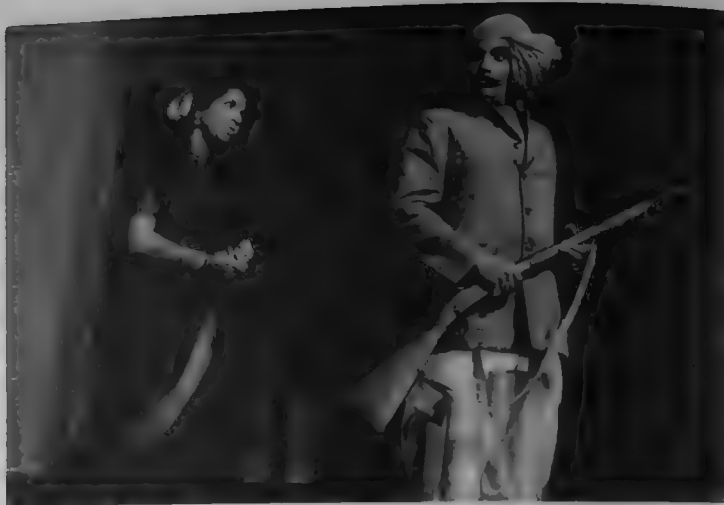
At that time I was carrying but I used to take rehearsals. Datta Bhat joined us for *Sasa ani Kasav*. We requested Mr. S. P. Bhagwat to become the President of our organization. As he said later, he accepted the responsibility because I was in *that* state! Rangayan was fully active from 1960 onwards. I had followed Alkazi's pattern and hence there were various types of programmes. For example, how theatre was related to other arts was one of our major concerns in organizing programmes. We wanted to have a membership scheme and our plan was to have about one thousand members! However, the nucleus group of about thirty was the main unit and that included playwrights, writers, painters etc. A minimum of six programmes were to be presented annually. Every play would have only five to six shows and we were to switch over immediately to new experiments. We were to plan one year in advance and membership dues were accepted on the basis of the programmes announced. It was almost like entering into a contract with the members. Our ambition was to give ten programmes though we had announced only six. As Alkazi had left by that time, we could use the place in "Hasman" at the Bhulabhai Desai Memorial Institute. Our rehearsals and even one-acts were presented there... *Nimma Shimma Rakshas* and *Madi* were also staged there. We wanted to open a branch in Pune... Till 1967 i.e. for about eight years Rangayan was, in my opinion, doing very well.

**V.R.:** Tell me one thing. To what extent your co-workers contributed to the ideas accepted by Rangayan? Or, were they playing second fiddle to you?

**V.M.:** The policy matters i.e. programming was decided upon by five persons — S. P. Bhagwat, Vijay Tendulkar, Madhav Watve, Sarawate and me. Which playwright, which translator, whether to do a musical or theatre of the absurd... all such questions were

discussed by these five persons. The question which you have posed is related to the leadership quality which I have. I looked after the financial, the structural and the creative aspects of Rangayan with the help of these five. I had declared that I would run the organisation for two years and those who assisted me i.e. Datta Bhat, Madhav Watve and Arvind Deshpande, were to take over after the two-year period. This did not happen. Now I know why it did not happen so. Also Hareen died in 1964 and my life was shattered. I requested them to takeover Rangayan because I felt the need to earn my own living. I did not want to depend on the Khote family. I was very unhappy when Datta Bhat refused because he wanted to do *Mandarmala* on the commercial stage. At the same time difference of opinion developed between me and Tendulkar, who gave his new play to Sahitya Sangh and Arvind accepted to direct it. I think that was the breaking point. ...*Sari ga Sari* was the play and it was in 1964. Madhav Watve remained close to me. However, he never used to direct when I was there. Now I realize why Arvind Deshpande wanted to direct for the Sangh even when Rangayan was in existence.

...From 1964 to 1969 Rangayan continued though I felt the pressure of bearing the three-fold responsibility. At that point of time Vrindavan Dandavate joined in. I did more plays of Vrindavan than Tendulkar in later years. Ashok Shahane also used to be around and belonged to our think-tank. Rangayan had more diversified programmes and people realized the value of it. For example, we put up *Khurchya* and announced that there would be a discussion of the play after the performance with the audience, director etc. ...The next landmark for Rangayan, in my opinion, was when Bhagwat came to me with *Ek Shunya Bajirao* telling me that it was written by a poet called Aarti Prabhu. The reading of the play was a staggering experience for me though the third act required some working over. Ultimately I came to know that Khanolkar was Aarti Prabhu. He was not articulate. He could not explain how he wrote the play. But in that play he had touched on the core relationship between theatre and life. I directed it and played Gauri in it. I did not do justice to the character. I realized this when directing the play. I remember having invited Sadwelkar to do the sets. I had told him that we did



Vijaya Mehta and Anantrao Vartak in *Ek Shunya Bajirao*.

not want realistic sets. Sadwelkar had seen it through the eyes of a painter and I could not accept it. The different reality that the play had could not be caught at all! People praised the direction but I was dissatisfied. By that time I had married Farrokh. Once more life was fitting into a pattern. Farrokh was invited to England and I applied for a British Council scholarship to study training methods. I stayed in England for nearly two and a half years.

In England, France and Germany I studied indepth methods of training actors to produce non-realistic theatre. I used to get letters from Bombay from Dandavate and Watve, expressing their anxiety about Rangayan which was obviously not functioning as it used to. I was told that annually a play or two were produced for the sake of participating in a competition. The method of rehearsals was entirely changed with Arvind and Tendulkar at the helm of affairs. After my departure from Bombay, commercial theatre was raising its head prominently. I was informed how *Shantata! Court Chalu Aahe* had won an award and they were notching 60 to 70 performances. I was baffled! The original idea was to perform a play for five to six times and leave it behind to seek for new experimentation. That was

the contract. I became restless. I was convinced that after going back, Rangayan would have to change completely. It will have to operate as a real workshop, which was the actual method of theatre-activity. In Europe there was a professional theatre as well as an amateur theatre, but the amateur theatre operated as a workshop. With this idea I came back and had discussions. However, in the very first meeting I realized that during the period of three years I was away Kakde, Arvind Deshpande etc. had probably become convinced that their method, system was 'right'. They were talking of producing *Tughlaq* with a budget of Rs. 25,000/- that meant the pattern of Rangayan was to be abandoned in favour of a festival of productions. I wanted to tell them that we had not yet arrived at a stage of having festival productions. We were only making a beginning. Rangayan should take to workshops and *Tughlaq* would not fit into it. Finally I felt that they should be allowed to work as they liked.

Between 1970 and 1972 Rangayan broke up. That was the period which almost lacerated me at the personal level. I decided to begin the workshop movement. I had new colleagues, the old ones were busy giving performances of *Shantata! Court Chalu Aahe*. My new colleagues were the Kulkarni brothers, Bal Karve, Prabhakar Patankar, Bhakti Barve, Meena Naik etc. and I had a new playwright in Mahesh Elkunchwar. I had read his *Sultan* in "Satyakatha" and I began my workshop with *Holi* and *Sultan*. The workshop method included training in voice, physical exercise etc. Unfortunately, the older structure of the Bhulabhai Memorial Trust had made way for "Akash Ganga" and the entire atmosphere had changed. I had Watve and Dandavate with me and we produced *Bai Khula Bai*, *Mana Sajjana*, *Ek Hoti Rani*, *Mata Draupadi* and finally *Devajine Karuna Keli*. In about two years time we staged twenty productions. I would not call it a creative period, it was more or less a frenzied period. Gradually I realized that even the new group did not seem to respond to the workshop idea in its totality. I felt I was not interested in continuing to lead all the time. It also occurred to me that it might be due to my non-Marathi sensibility that I could not

get along with my own people. As a result in 1972 I discontinued the Rangayan effort. I did try to think of having a professional wing of the Rangayan. *Mata Draupadi* was a result of that process. But on the whole the period was bad for me.

In 1972, I almost decided to retire from theatre and also thought of searching for a job. At that juncture, Madhav Watve and Damu Kenkre came to me and said, "If you retire now you will feel that you have accepted defeat. Theatre is not to be equated with Rangayan! You must come to the professional theatre and try to work out your way in it."

In 1973, I acted in *Mala Uttar Havay*, a play which nearly caused my blood pressure to rise! I did it only to announce that I was available for the professional theatre. In 1973 I also did *Sandhya Chhaya*, *Jasvandi* and *Akhercha Sawal* in succession, having thirty to forty performances in a month. That was my last appearance on the professional stage as an actress. During that time I came in contact



Datta Bhat and Vijaya Mehta in *Akhercha Sawal*.



Bhakti Barve and Madhav Khadilkar in *Ajab Nyay Vartulacha*.

with Fritz Bennewitz. Till 1980 I worked with him producing *Ajab Nyay Vartulacha*, *Shakuntal*, *Mudrarakshasa*. In a way, these productions were connected with the professional theatre on the one hand and the international theatre on the other.

V.R.: Did you feel like coming back to the experimental theatre proper?

V.M.: No.

V.R.: Was the shadow of Rangayan following you all the while?

V.M.: After the breakup of Rangayan, I did not have any communication with anybody on the experimental stage. I avoided going anywhere, apprehensive that I would meet the same people again. Once I began acting on the professional stage, I continued for seven years wholeheartedly. The point is that I had totally lost touch with the experimental theatre after the breakup of Rangayan. Satish Alekar and other new theatre workers accuse me of not seeing their theatre. The fact is I did not have the time. Even the Chhabildas movement, which had been so much talked about was an escape route found by the Awishkar. Even through the Rangayan movement I had pleaded to have a definite place, but that was for the workshop activity. That was the commitment. My objection to the Chhabildas movement was that they created a place but did not have any quality control. The contribution of Awishkar is not creative. The creative work can perhaps be confined to about two to four performances by Amol Palekar, Dr. Lagoo or Arvind Deshpande. Nothing happened in Chhabildas that could change you! I must also admit that while working on the professional stage, I was not dissatisfied. Otherwise I may have turned to experimental theatre again. But *Barrister* for example, has given me satisfaction. Many people do not like this way of looking at theatre, but in my opinion I made a progress.

V.R.: On the professional stage you came in contact with different types of people, did you change your way of handling your colleagues?

V.M.: Yes.

V.R.: Is it true to say that you decided to direct so that you could have all the controls in your hand?

V.M.: Really speaking you have asked me two questions. I decided not to allow anybody to hurt me. If anybody behaved in a way that bothered me, I now look at it as his way of coping with the situation. I stopped having expectations from others. This was about your first question.

I turned to direction from acting because I did not see any director from whom I could learn.

V.R.: You were with Bennewitz, an international figure whom you respect ...Suppose he had made you an offer to direct you in his production, would you have changed your decision?

V.M.: No. Basically because when Bennewitz came and worked here, he produced German theatre and I did not feel like doing German theatre in India. He could not produce an Indian play. When I say I did not get a good director, I mean I did not find any Marathi theatre director who worked methodically. Whenever I acted in plays I was hardly directed! I worked with P.L. Kenkre and Watve. I worked with Watve in *Sandhya Chhaya*, but I do not think I got anything from him as a director.

V.R.: Experimental, professional and international theatres, you have worked in all. Where do you feel more confident?

V.M.: In every kind of theatre. I went to the professional stage because I felt stonewalled in the experimental. On the professional stage I got bored because it became a routine affair. Travelling for hours together in a bus, to stay in some dingy lodge ...that was a dead end. At this juncture I came in contact with Bennewitz. Every opportunity I received, I worked hard to make it meaningful. I accepted it as a challenge to feel comfortable in different frameworks.

V.R.: Every time you felt a void you sought a way out. In this context your taking to the films...? I know it must be satisfying to go to Germany and stage plays there. It must be worthwhile for you personally. But has it any significance for theatre as such?



V.M.: By theatre if you mean Marathi theatre than it would mean taking Marathi theatre to Germany. For example, *Ghashiram Kotwal* created history in Marathi theatre and it also created a symbol of Indian theatre on the international scene. *Hayavadana*, *Mudrarakshasa* or *Shakuntal* literally created a consciousness about ritual theatre abroad. The documentation of *Hayavadana* is quoted as an example of folk theatre. That the theatre authorities abroad consider these plays useful for contexts is, in my view, a contribution. This you will not get in Shivaji Mandir.

V.R.: If you were that successful and satisfied on the international plane, why did you feel the necessity to turn to films?

V.M.: One of my decisions lately has been to stop acting in plays. This gave me more time. The plays I directed would be on tour and I would have more time at my disposal. Therefore, when Doordarshan asked me to do *Smriti Chitre*, I accepted the proposal. After completing *Smriti Chitre* I felt I had taken a lot of trouble for it and if this was to be worthwhile I must make a film out of it. Even before I could act on the idea Malati Tambe-Vaidya, who had seen *Smriti Chitre*, told me, "You are a film-maker, you cannot stop doing films. Do a film for us". Therefore, I did *Rao Saheb*. *Rao Saheb* was successful and it was followed by *Pestonjee*. I have done three films so far, but I do not think I have really broken away from theatre.

V.R.: After having worked for so many years in theatre, the question arises: When do you propose to write on theatre? Of the theoretical kind or on your experiences with Rangayan?

V.M.: I am a performing artiste. I do not know how to bring energy through words. I do not have verbal expression. I cannot even write a letter properly! I will have to learn language afresh. What I speak is too bookish. Some people like Peter Brook write down while they are producing a play. The books he has written in this manner are incomparable. But there are some who have written only after they have finished their creative/performing work. Hopefully I presume to be this kind of a person!

V.R.: Would that mean 3-4 years hence? You would be more calm then, life would be less hectic!

V.M.: Yes, yes.

V.R.: But I have a question which is nagging me. Persons active in theatre or films need crowds or a spotlight on them. If this moves away from you, would you like that solitude? Would you be able to bear it?

V.M.: I do not know about the spotlight that you are referring to. My creative activity is a communicative activity. I can talk to you about my thoughts, but I cannot sit at a table to write them down! That is solitude. This type of solitude I can enjoy at my home once in a while. But if this is to become the order of the day ..... that makes me anxious!

V.R.: You cannot enjoy it, is it?

V.M.: No, I cannot. And yet I feel I have the capacity to fill the voids that you have talked of. I can adapt.

V.R.: Thinking back how would you summarize your achievements? What are the main personality features you feel are important? For example, you are a committed person.

V.M.: I am not a great thinker. I am creative and sensuous. Sensuous because I have a great capacity to feel. Even today I have some naivety. I work very hard. One important quality I have is that I do not consider myself a very important person. Perhaps, I feel this because *I am* getting enough importance! I would have to see how I feel when people cease to give me importance! Secondly, I never turned professional fully. Throughout my career I have been a mother, daughter-in-law and wife. Therefore, I do not have an independent artistic temperament!

V.R.: With some regret I must say that the qualities you have

mentioned are manly! But you do have a feminine quality. The question is: did you use your feminine qualities to shape your career and secondly, in your career did you face any problem because of male ego?

**V.M.:** All my sons call me "Kapurush O Mahapurush!" I have grown up with boys. I have more friends amongst men. I have very few women friends. I have felt comfortable with men. In fact women often bore me because they are involved in petty things.

In the initial stages my being a woman helped me. I received easy praise. Some of my friends maintain that I could achieve what I did because I am a woman! I have realized that one may receive such encouragement and praise only up to a point, till the men around can have a patronizing attitude about you. Even today men do not like women to be in equal competition with them. Therefore, if a woman has to arrive, she has to have extraordinary strength. Only that will allow her to stabilize. This has been my experience. Many persons who were near to me are now not so near. This is the disadvantage of being a woman!

**V.R.:** In good sense of the term, do you like to be successful? Any memories of failures?

**V.M.:** As I have often said to you, success and failure are comparative terms. There are persons who have succeeded much more than me and compared to them I have not achieved much. On the other hand, there are people who have not done much and they feel that I am very successful. The important question is: after fifty years of life and work would you call your life meaningful? In this context I feel that I have done what I could, according to my capacity. I do not know about its quality. ... To some extent I have neglected my body, also my mind as far as its finer development is concerned. However, I have never ignored my work. I have done everything sincerely and I received satisfaction from it. I have always worked very hard, my plays have been successful and people remember them, but the drama of my life has not always been successful!

## Guru Kittappa: Understanding Bharata Natyam

Sucheta Chapekar

My first memories of Guru Kittappa date back to 60s when I was still a young student with Guru Parvatikumar. Kittappa Sir used to come to Masterji's (Parvatikumar's) house for *talam-s* (cymbals). Masterji had experimented with a new alloy for making *talam-s* of various pitches. Kittappa Sir had an appreciative eye for such things and he opted for Masterji's *talam-s* instead of those normally available. My knowledge of Bharata Natyam was really very limited at that time but I could observe the eagerness with which Masterji used to ask me to perform the newly choreographed compositions of Sarfoji for Kittappa Sir. I could also feel the utmost reverence with which Masterji regarded Kittappa Sir. I hardly knew then that this was indeed the Master through whom I was finally to understand the depth of the traditional technique and its nuances.

It was the 70s, and I had performed my *arangetram* under the guidance of Guru Parvatikumar and was already performing the Sarfoji compositions choreographed by him. At that time, my father was my sole, personal guide and critic. Ours is not a musician's family and my parents hardly knew anything about traditional dance. However, my father, a painter, made a comment which I took quite seriously. He used to say, "Sucheta, you have all the technical perfection in your dance but when I see the traditional dancers, I feel, there is something lacking in your style. I cannot pinpoint what it is but you will have to find it out for yourself."

As a keen observer and ardent admirer of Balasaraswati's dance, I felt that her exposition was the highest that the Bharata Natyam art form could achieve. I always thought her to be an ideal I would like to reach if ever I could. Initially, it was through her dance that I realized Bharata Natyam to be essentially music. Bala literally used

to sing with her body. I later experienced the same quality of music in Guru Kittappa's style. It was indeed very rewarding at that time to watch the recitals of Vyjayantimala with Kittappa Sir doing the *nattuvangam*. So, it did not take a long time for me to realise what was lacking in my dance: it was the total feel of music. I immediately started formal training in Carnatic music. This training gave me a true insight into the musical nuances of Bharata Natyam. Earlier I had merely enjoyed the music, now I was beginning to understand how music can be danced.

Hence when I wanted to present King Shahaji's compositions, in dance form, the only person I could think of was naturally Kittappa Sir. However, in the beginning, reaching him was not so easy. There were lots of questions: whether he would accept to teach me, a Maharashtrian, whether he would have any apprehensions about my earlier training, whether he would find King Shahaji's Marathi, Hindi and Sanskrit Musical literature worth giving a thought. Besides, the



Sucheta Chapekar felicitating Guru Kittappa

practical problem of verbal communication! He did not know any languages other than Tamil and Telugu and I was not exactly fluent in these languages. But I need not have worried. There was a common language, the language of love and understanding for Bharata Natyam!

I clearly remember still my first meeting with him in Bombay. His tiny eyes started sparkling as I showed him the various types of *daru-s* from King Shahaji's *prabandha-s* which I had selected from the manuscripts at the Saraswati Mahal Library at Thanjavur. I was happy to know that he not only had knowledge about the Thanjavur Maratha rulers' contribution to Bharata Natyam but also of Shahaji and Tulaja held in regard as musicologists. He said, he was aware of the earlier forms of dance compositions and already knew many types of *daru-s* composed by his forefathers.

There were also some rare *raga-s* like Padi, Gauri and Revagupti mentioned in King Shahaji's compositions. But Kittappa Sir had knowledge of many such rare *raga-s*. He readily agreed to compose music and choreograph these *daru-s* for me and thus started a very fruitful period of my dance training with Kittappa Sir. Many a times; I travelled to Bangalore and Thanjavur to learn from him and he also used to make it a point to find time for me whenever he used to be in Bombay. I took this golden opportunity to learn some traditional *varnam-s*, *jatiswaram-s*, *tillana-s*, *javali-s* which were the compositions of his ancestors who belonged to the family of the great Thanjavur Quartet. Chakrawakam (*Sadaya*), Ragamalika (*Sami Ninne*), Kapi (*Suma Sayak*), Jhamas (*Samini*) and the famous Husani Swara Jati (*Ye Mata Ladirā*) are some of the traditional gems I learnt from Kittappa Sir.

A few instances are noteworthy from the point of view of providing an insight into Guru Kittappa's way of teaching and his outlook.

During the course of training, particularly when I used to leave my small child behind in Pune to go to Bangalore, I used to be very eager and ever prepared to absorb as much knowledge as possible. I was ready to take lessons at any time of the day or whenever Sir used to

find it convenient or even if he wanted to teach me the whole day! However, he preferred to teach only a small unit in one session. With my experience of a decade, I used to hardly take any time learning the same. But he would insist that, that was all for the day and I literally used to be in tears. Years later now, I realise that those compositions have been perfectly inscribed in my memory, so much so that I can recall them at any time and this could only happen because of the long time given for me to assimilate. Due to my earlier training, my *adavu*-s were technically perfect and he never had to give me any corrections in *nritya*. However, at times, he used to tell me to relax while executing a movement. The tension in the backbone not only makes the movements look rigid and jerky but also puts unnatural strain on it. A relaxed demeanour also makes it possible to execute the *adavu*-s in a leisurely tempo involving a full body swing and curves, bringing out the grandeur of this style.

Guru Parvatikumar had taught us dance notations and whenever Kittappa Sir would give me a lesson, I would immediately write it down. I wonder whether he himself used to teach this to his disciples. However, he admired my ability to write notations quickly and used to encourage me to do it. In fact, if I forgot to do it, he would softly remind me about it.

Over the period I realised that Kittappa Sir had a special method of composing the *tirmanam*-s. I remember that during one of his master classes, which he was conducting under the auspices of the Bhulabhai Memorial Institute in Bombay, I had requested him to teach me only the *sholli kattu*-s of the *tirmanam*-s. He looked at me with that special mischievous look in his eyes and asked me what I wanted to do with it. When I explained that I wanted to find out the principles behind his special way of composing, he smiled with satisfaction and happily laid in front of me his wealth of dance *tirmanam*-s.

I never learnt any *abhinaya* from Kittappa Sir nor did I ever have the opportunity to see him teaching *abhinaya* to his other disciples. Of course, he used to explain the word meanings and show different *hasta*-s for the words. But I felt that his *sanchari*-s came more through

his musical expression rather than body language. To learn *abhinaya* from him, one has to have a keen musical ear and a sound knowledge of the technical language of *abhinaya*. One only has to listen to his singing of *padam*-s like "Sakhi Prana" or "Netra Varen" or a *javali* like "Itu Sahasamulu", to understand this. The musical variations which he developed have a special audiovisual quality which is very essential in the rendering of a dance composition.

While choreographing Marathi, Hindi and Sanskrit compositions of King Shahaji, he had asked me to give him a transcript in Telugu (since the Telugu script is phonetic like Devanagari) and translation in Tamil. At times, he used to ask me to set the words in the given *tala* so that there was no undesirable breaking of words or phrases. He also gave a lot of attention to the meaning and *rasa bhava* of the lyric while choosing the *raga*-s, whenever they were not mentioned in the body of the text. For *Ragamalika Abhinaya Daru* in Hindi, he has purposely chosen *raga*-s which are similar to the Hindustani *raga*-s like Bihag, Kapi and Kanada. He also considered fully the rhythmic aspect of words in a lyric. For example a unique piece is found in the manuscript of Shahaji's *padam*-s in which there are only two words in a Pallavi "Pahile Krishna". What follows then is a sequence of four *charana*-s, with 3/4 rhyming lines with different *akshara*-s. Though it was listed as a *padam*, Kittappa Sir could feel its innate structure as more akin to the *padam*-s from the *Kirtana Parampara* and he duly utilised the rhythm and musical notation to suit the same. He prepared notation of nine different *daru*-s and *padam*-s of King Shahaji and I had the honour and privilege to present them before the enlightened audience of the Music Academy, Madras in 1974. This recital was compered by the late Dr. V. Raghavan, an eminent scholar of dance and music. While Kittappa Sir conducted the recital, his foremost disciple Padmalochani, a well-known singer and dancer herself, gave the vocal support.

Kittappa Sir has an impeccable sense of *laya* and his *kala pramana* never wavers even a bit during the course of a composition. While conducting the programme, he commands *kala pramana* so majestically that the dancer has the total freedom to concentrate on

the dance movements. This gives a feeling of total abandon, extreme joy and ecstasy. In the course of my long association with Kittappa Sir, I could make the following observations about his way in choreography.

1. In it music comes first. He seems to see the visuals along with the music. So, whenever he choreographs a dance pattern into a musical structure, it blends perfectly into it.
2. He gives a lot of importance to the plain rendering of notes. He does not advocate unnecessary *bhruḡa*-s or the twisting of words in singing. His *sangati*-s in *varṇam*-s and *padam*-s give utmost importance to words and emotional content. Once while commenting on my choreography of a Marathi *varṇam* of King Sarfoji in Aadi *tala*, he pointed out to me that the important word and the musical stress fell on the 4th *matra*. So he advised me to end my *arudi* on the 4th *matra* instead of the usual 5th *matra*. According to the *Shastra*, *arudi* should normally end after the first *laghu* in the given *tala*. But according to Kittappa, in an *abhinaya* composition, the impact of the words is more important even if it means that you have to take a little liberty with the norms of the *Shastra*! With the same principle, he also takes liberty while doing *sangati*-s for a *padam* in a particular *raga*, to use the *swara*-s or a *swara sanchari* which normally may not appear in the usual exposition of *raga* but seems to effectively embellish the content of the *sahitya*. His musical renderings for dance may sound a little too simple if you happen to listen to them alone. However, in combination with choreography, his music takes on quite another hue. In short, his is an audiovisual music.
3. Guru Kittappa's choreography of *adavu*-s is always in the *madhya laya*. Sometimes he combines it with the *shollu*-s in *dhrut*. His *shollu*-s form a beautiful dialogue with the *adavu* patterns. His *tirmanam*-s, particularly in *varṇam*, are never too long except the first Trikala *tirmanam*. It seems quite correct to me not to include the long drawn patterns of *tirmanam*-s in *varṇam* or *swara jati*-s since (though *varṇam* does strike equal stress on *nritta* and

*abhinaya*), it is the emotional aspect or the portrayal of the Virahitkathita which should be dominant. The long *tirmanam*-s in between the four lines of the *varṇam*, which are most appropriate for doing the *sanchari*-s, only break the mood and the theme of the *varṇam*, rather than showing the demarcations between the lines and forming a kind of a visual relief.

4. His *tirmanam*-s will never sound complicated. However, when one starts reciting them with the *tala*, one comes to feel the clever weave of the *pancha jati*-s of the *karvai* (pauses). His patterns of *adavu*-s for these *shollu*-s look even simpler but once one sees them in dialogue with the *tirmanam*, the whole pattern starts sparkling like a jewel. He also make a judicious use of various *yati*-s like Srotagata, Pipilika, Mridanga and so on.
5. He expresses his philosophy of Bharata Natyam choreography in just a few words, "Dance should be beautiful to see AND to listen". The impact of the beauty which his choreography creates is heartwarming and full of transcendental peace and tranquility, an impact which takes one within and makes one more introspective and aware of the self.

The passage of time has carried me into 90s when deeply engrossed in my own experiments, I have come a long way from my link with Thanjavur and Kittappa Sir. But the understanding of the basic principles of Bharata Natyam I have from Kittappa Sir, has always been with me and it forms an intrinsic part of my work today which involves synthesis of Bharata Natyam with Hindustani classical music.



# Physics of *Tanpura*: Some Investigations

Dr. H. V. Modak

*Tanpura* is a four-stringed instrument mainly used in Indian classical music. The four strings are tuned to  $\text{Pa}$  ( $\text{Pa}$  in lower octave)  $\text{Sa}$ ,  $\text{Sa}$ , and  $\text{Sa}$  ( $\text{Sa}$  in lower octave). The strings are plucked in the same order  $\text{Pa}$ ,  $\text{Sa}$ ,  $\text{Sa}$ ,  $\text{Sa}$  at such a rate that the tones of successive strings overlap and give rise to combination tones. The drone of a *tanpura* consists of: (i) the fundamental notes or the primes, (ii) the harmonics and (iii) the combination tones. Accompaniment of *tanpura* drone helps the singer to remain in tune with the notes of the scale used.

The quality of a tone produced by a musical instrument depends upon the nature of vibration of the sound-producing object such as reed, string etc. and also on the frequency response of the sounding-board.

## Nature of Vibration of a *Tanpura* String

The bridge on the board of a *tanpura* resonator (gourd) is wide and curved. It is made of ivory or sissoo wood. The strings pass over the arched bridge tangentially. A piece of cotton thread called *juari* or *jeeva* is placed under each string. Proper placement of the *juari* is necessary for producing characteristic *tanpura* tone (Figure 1). In this position of the *juari*, the string just touches (or is just above) the bridge surface, so that during vibration, the string gets lifted\* up in its upward motion and touches the bridge at the point of contact (Figure 1) during its downward motion. The string thus strikes the bridge periodically in the course of its vibration. Further, during the upward motion of the string, the end nodal point suddenly jumps from the point of contact to *juari* position and during the downward

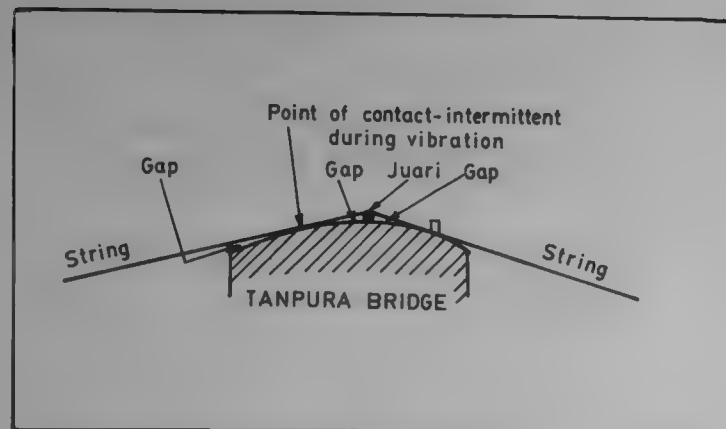


Figure 1

motion the nodal point jumps back to the point of contact and slightly drifts towards the left (Figure 1). Using a magnifying glass and strobe light one can see, in slow motion, the string leaving the bridge at the point of contact and returning to it periodically. One such slow motion video recording has been made at N.C.P.A.

The encounters between the string and the bridge surface are, however, not simple comprising of just one collision per cycle, as was thought by Dr. B. C. Deva.<sup>1</sup>

Collisions of the string with the bridge generate harmonics in the string and the string starts "quivering". Initially when the amplitude is large, contact (with the bridge) and no-contact timings during collision are equal. But soon after, as the amplitude of the string decreases, the collisions split up into four, then three, then two and finally one interval of shorter duration. Collision duration time-pattern is shown in Figure 2. Each pattern repeats a few times and is followed by the next pattern. A video recording of collision duration time-pattern has been made at N.C.P.A.

The above explained nature of vibration of the *tanpura* string explains musicians' observations<sup>2</sup> namely (i) the decay of harmonics

\* Lifting up of the string from the bridge has been noted by Dr. B. C. Deva.

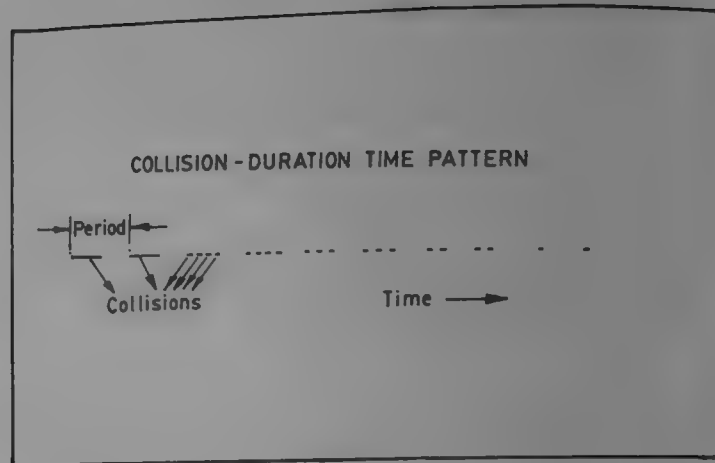


Figure 2

is slower compared to the decay of the fundamental and (ii) some of the harmonics start building up again during the course of vibration of the string.

In case of a string stretched on sharp bridges, harmonics requiring a node at the point of plucking are absent. But in case of a *tanpura*, such harmonics do exist. This has been explained by C. V. Raman<sup>1</sup> by periodic variation of the contact point between the string and the curved bridge.

Figure 3 shows a typical frequency response curve of a *tanpura* sounding-board. This curve was obtained by injecting air vibrations of constant amplitude in the cavity of the *tanpura* sounding-board through a small hole on the top plate near the bridge, and measuring sounding-board vibrations using a contact microphone. The frequency response modifies the proportion of harmonics produced by the string. Harmonics coinciding with the resonance frequencies (formants) of the sounding-board are reproduced with greater intensity compared to other harmonics.

### Tonal Quality of *Tanpura*

As a result of analysis of *tanpura* tones, it was noticed by the author<sup>1</sup> that the richness in the tonal quality of a *tanpura* is due to constant phase fluctuations between fundamental and harmonics. Using a recently developed method by the author, one can listen to the *tanpura* tones, notice the peculiar tonal quality and at the same time observe on Cathode Ray Oscilloscope (C.R.O.) phase fluctuations between fundamental and harmonics. If the curved bridge used in *tanpura* is replaced by a sharp bridge, then one can notice marked lowering in the richness of tonal quality and also observe absence of phase fluctuations.

Lissajous figure method is used for observing phases of harmonics. If a particle is acted on by a sinusoidally-varying force in 'X' direction,

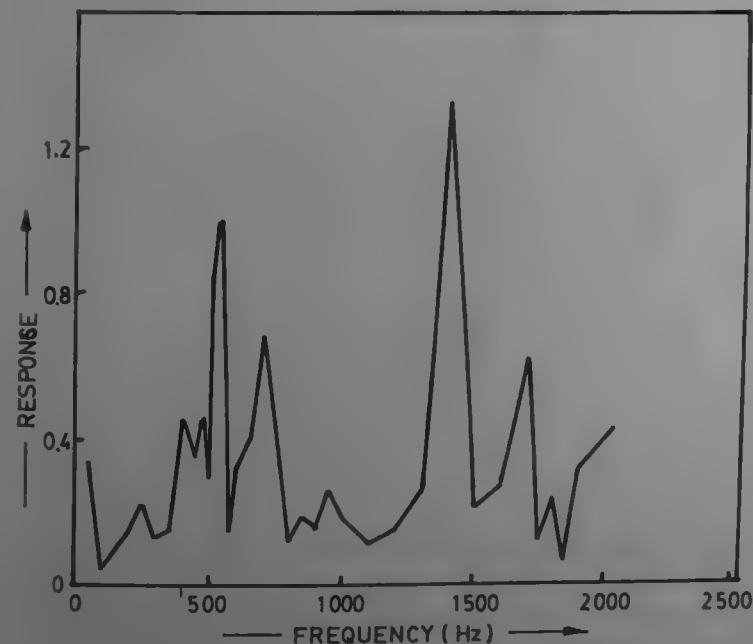


Figure 3: Frequency Response Curve of a *Tanpura* Sounding-Board





FREQUENCY RATIO	SHAPE OF LISSAJOUS FIGURE WITH PHASE DIFFERENCE
$N_x : N_y$ 1:1	 ZERO OR $2\pi$ $\frac{\pi}{4}$ or $\frac{7\pi}{4}$ $\frac{\pi}{2}$ or $\frac{3\pi}{2}$ $\frac{3\pi}{4}$ or $\frac{5\pi}{4}$ $\pi$
2:1	 ZERO OR $2\pi$ $\frac{\pi}{4}$ , $\frac{3\pi}{4}$ $\frac{\pi}{2}$ $\frac{3\pi}{2}$ $\frac{5\pi}{4}$ , $\frac{7\pi}{4}$
3:1	 $\frac{3\pi}{2}$ $\frac{5\pi}{4}$ or $\frac{7\pi}{4}$ ZERO, $\pi$ or $2\pi$ $\frac{\pi}{4}$ or $\frac{3\pi}{4}$ $\frac{\pi}{2}$
3:2	 $\frac{3\pi}{2}$ $\frac{5\pi}{4}$ or $\frac{7\pi}{4}$ ZERO, $\pi$ or $2\pi$ $\frac{\pi}{4}$ or $\frac{3\pi}{4}$ $\frac{\pi}{2}$

Figure 4

then the particle oscillates in 'X' direction. If the particle is acted on by a similar force in 'Y' direction, then the particle vibrates in 'Y' direction. If both the forces act simultaneously, the particle oscillates along a curve, shape of which depends upon the frequency ratio of

the two oscillations, their relative amplitudes and also on the relative phase between the two oscillatory motions. Figures traced by the particle are known as Lissajous figures. The figures have a simple shape when the frequency ratios are simple. Figure 4 shows Lissajous figures for four different frequency ratios 1: 1, 2: 1, 3: 1 and 3: 2 for different relative phase angles, but nearly equal amplitudes.

### Experimental Procedure for Observing Phase Fluctuations of the Fundamental and Harmonics of a *Tanpura* Tone

(I) One of the *tanpura* strings, (with a *juari*) under investigation, is tuned to its usual note by a musician. Vibrations of the plucked string are converted into corresponding electrical variations by a suitable electromagnetic pick-up. The electrical variations are amplified and electronically filtered to give sinusoidal output of fundamental frequency of the *tanpura* string. This extracted fundamental is connected to 'X' deflection plates of a C.R.O. (Figure 5). With this signal alone C.R.O. spot oscillates in the horizontal 'X' direction. The musician is then asked to adjust a stable sine wave oscillator exactly in tune with the fundamental of the *tanpura* string. This oscillator is connected to 'Y' deflection plates of the C.R.O. With this signal alone the C.R.O. spot swings in the vertical 'Y' direction. With both the signals the spot traces a Lissajous figure and since the frequencies of the two signals are equal, shape of the figure

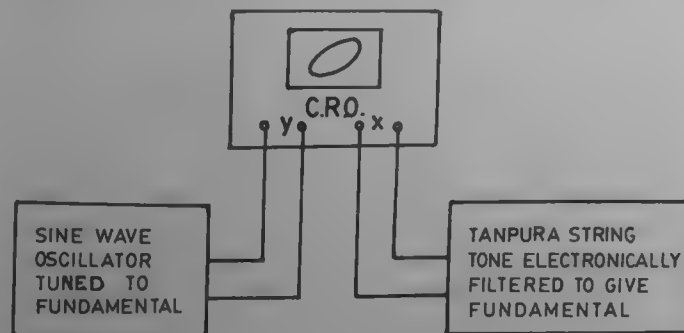


Figure 5

is a straight line or an ellipse or a circle. It is, however, observed that the shape of the Lissajous figure does not remain the same during the course of vibration of the string. The changes in the shape of the figure (line to ellipse to circle and back) indicate phase fluctuations of the fundamental relative to steady oscillator signal. The phase fluctuations are due to slight variations in the fundamental frequency of the *tanpura* string.

(II) The experimental arrangement is then slightly modified as shown in Figure 6. This time the electronic filter is tuned to give second harmonic output. Repeating the procedure, as explained above, a Lissajous figure is obtained on the C.R.O. screen. Since the frequency ratio this time is 2:1 the shape of the Lissajous figure is

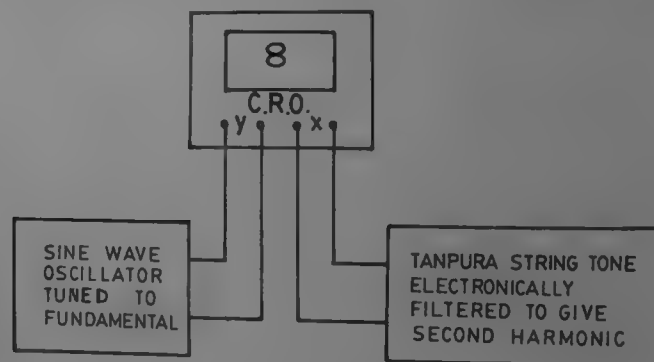


Figure 6

a parabola, or a figure of eight, or oppositely directed parabola. It is also seen this time that when the string is plucked, the shape of the Lissajous figure does not remain steady, it swings from parabola to figure of eight to oppositely directed parabola and back. This is due to phase fluctuations of the second harmonic relative to the stable oscillator signal. The phase fluctuations indicate slight frequency variations of the second harmonic of the *tanpura* (string) tone.

(III) The sine wave oscillator is now removed, instead the fundamental and the second harmonic are simultaneously extracted

using two electronic filters as before. The outputs of these filters are applied to the C.R.O. as shown in Figure 7. Since the ratio of the two frequencies is 2:1, the shape of the Lissajous figure is a parabola or a figure of eight or oppositely directed parabola.

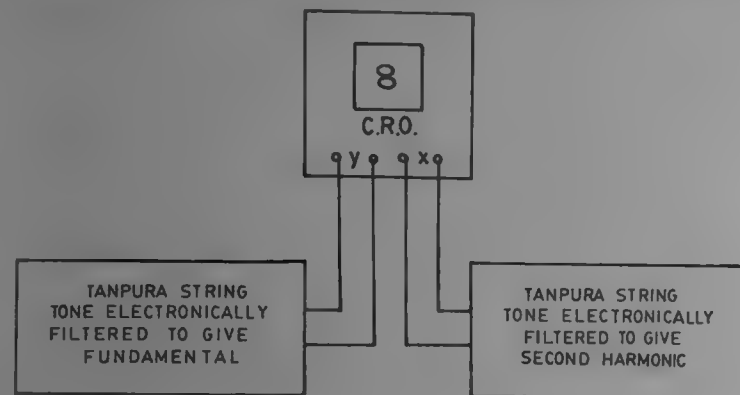


Figure 7

The shape of the figure this time also does not remain steady during the course of vibration of the string. The figure swings from one shape to the other. This is due to phase fluctuations of the second harmonic relative to fundamental and indicate that frequency variations of the fundamental and second harmonic are not synchronous. Similar results are obtained for higher harmonics also.

If the curved bridge used in *tanpura* is replaced by a sharp bridge then no such phase fluctuations, as described above, take place. One can also notice lowering of the tonal quality of the string. In this case, when the string is plucked, the shape of the Lissajous figure almost remains unchanged but only the size of the figure goes on decreasing with the decaying amplitude of the vibrating string. It, therefore, follows that the cause of the phase fluctuation lies in the peculiar shape of the curved bridge. Phase fluctuations between fundamental and the second (or higher) harmonic take place even if *juari* is removed. The only difference is that when the *juari* is not used, the phase changes are slow resulting in slow variations in the shape of

Lissajous figure. *Tanpura* tone becomes richer in harmonics when the *juari* is used. Use of *juari* reduces the duration of vibration of the string and, therefore, with the use of *juari*, changes in Lissajous figures take place rapidly.

The cause of phase fluctuations, therefore, lies in the use of a curved bridge.

#### To Summarise

(a) The fundamental as well as the harmonics produced by a *tanpura* string show slight frequency variations (0.5 to 1 percent). If this is the case of a reference instrument, then what is the accuracy expected from a singer? Musicians should give a thought to this.

(b) Frequency variations of fundamental and harmonics are not synchronous, resulting in relative phase modulation.

(c) This type of phase modulation is the cause of peculiar tonal quality of *tanpura*.

(d) Fourier analysis of *tanpura* tones, presently carried out with computer, is not aimed at giving information regarding phase fluctuation of harmonics relative to fundamental. The author believes that such information is necessary in describing the tonal quality of *tanpura* or of instruments like *vina* in which curved bridges are used.

(e) Tonal quality of electronic *tanpura*-s presently manufactured may be more realistic by incorporating phase fluctuations described above.

(f) Since the strings used in *tanpura* are stiff, not perfectly flexible, it may be worthwhile to examine deviations of *tanpura* harmonics, if any from ideal values.

(g) The *tanpura* drone consists of the primes or the fundamentals, the harmonics and the combination tones. We believe that the

*tanpura* drone helps the singer in maintaining correct intonation. Since the frequencies of the fundamental and the harmonics are slightly fluctuating during the course of vibration, it may be worthwhile to study with precision the nature of combination tones.

#### References:

1. B.C. Deva, *Tonal Structure of Tambura Thesis* submitted to Gandharva Maha Vidyalaya, published by Sangit Kala Vihar, March 1960, p. XV, August 1960, pp. 27-29.
2. H.V. Modak and K.V. Desa, *Study of Vibration of a String over a Tanpura Bridge*, Journal of the Acoustical Society of India, Vol. XIII, No. 3, July 1985, pp. 121-123.
3. A. Ranganathan, *The Relevance of Professor C.V. Raman to the Physical Theory of Musical Instruments*, N.C.P.A. Quarterly Journal, Vol. XII, Nos. 2 & 3 (Part One), June & September 1983, pp. 11-21.
4. H.V. Modak, *Automatic Musical Instrument in Aid of Research in Indian Music*, "Sangeet Natak"—Journal of the Sangeet Natak Akademi, New Delhi, July-September 1970, p. 91.



## BOOK REVIEWS

KATHAK PRASANG edited by Rashmi Vajpayee, Vani Prakashan, New Delhi, 1992, Rs. 140.00 (In Hindi).

Ms. Vajpayee is to be commended for collecting important articles on Kathak and presenting us an anthology. Far too often, proceedings of symposia and academic discussions on Kathak do not percolate to the students and scholars. Thus, Ms. Vajpayee's contribution is of importance: more so since her anthology is in Hindi, the *lingua franca* of Kathak.

Divided in four sections, articles from Ramnarayan Agarwal, Guru Mohanrao Kalyanpurkar, Guru Rohini Bhate, Dr. Sunil Kothari, Puru Dadheech, and others make a systematic study of Kathak's history, its technique, and *gharana*-s. Ms. Vajpayee's own study of the present situation completes the anthology.

Shri Chobeji's article on revered Guru Pandit Acchan Maharaj reveals the maestro to the present generation of Kathak students, to whom he remains historically inaccessible: often referred to, rarely explained.

Shri Keshav Kothari analyses the Kathak dance form and aptly illustrates its richness with reference to Pandit Birju Maharaj. To counter allegations of minimal stylisation and looseness of format that makes performances appear disjointed, Shri Kothari points out how Pt. Birju Maharaj turns these into advantages, for his complete mastery over the form allows even his improvisations to raise the form to newer heights. A point that must be noted by all performers of Kathak.

Regretably, there are a few lapses in the anthology. Ms. Vajpayee omits the dates when the articles were first published: thus severing them from their historical context. In her foreword, she does point out that the resources at her disposal were limited. And while the timely apparition of her collection is welcome, it offers only a

telescoped view of the vast field Kathak has become. None of the recent developments in theoretical research or technique are included.

However, the more serious lapses lie elsewhere. Pandit Sunder Prasadji is paid due, respectful homage by the late Guru Mohanrao Kalyanpurkar. But the other "greats" of the Jaipur *gharana*, ace practitioner late Pandit Durgalal included, are not mentioned by any author. And in the section of *gharana*-s, the Benaras *gharana* is conspicuous by its absence.

Guru Rohini Bhate is represented by three articles. She insists that *abhinaya* cannot rely solely on *mudra*-s and that deeply felt emotions are necessary to effective portrayal. And yet, her full views on the subject are not lucidated: no doubt a limitation of the anthology genre.

As in most anthologies, the reader comes away frustrated because subjects are never plumbed to their depths. Perhaps an annotated bibliography of suggested readings would complete the present anthology.

In the foreword, Ms. Vajpayee admits that *nritya*, although dominant in today's auditorium performances, has not been adequately treated by her authors. Although Guru Kalyanpurkar discusses *nritya* in his article, contemporary concerns like spatial balance, flow of body lines etc. are not broached. For an anthology with an avowed academic audience, these shortcomings become serious. The field of Kathak is evolving constantly, and any attempt to catch its nuances must take into account the myriad views held and practised by performers.

The choice of articles, their sequence and editorial comments in the present anthology are commendable. But they all point to the need for increased production of literature in the field: this calls for more attention as maestros disappear.

—SHAMA BHATE

This biography of Tyagaraja is refreshingly different from the musical biographies of composers written by biographers who immortalise their heroes. It is true that Tyagaraja is considered as a "saint" composer by musicians and the lay public. But the making of a legend and the roots of Tyagaraja in the musical history of South India are very well brought out in this book. The author being a scholar in comparative religion is in a position to analyse the making of a saint in different religions and draws parallels between different legends about "saints" which are built up over decades. For example the role of "harikatha" performers of Thanjavur School is well brought out (Chapter I).

In Chapter II, the author deals with the original history of the Kaveri delta and the cultural background of the "Smarta" brahmins as well as their place in the society at that time. The "bhakti" tradition of "namasiddhanta" (chanting of divine names) was common among them and Tyagaraja is supposed to have chanted "Ramanama" millions of times. The author points out interestingly that the "haridasa" costume of Tyagaraja was identification with the poor peasants (as Gandhi did in later period) (p. 35).

The third chapter deals with the history of South India in general and Thanjavur in particular, the rules of Hyder Ali, Tipu Sultan and the Marathas thereafter. The author gives many examples from Tyagaraja's compositions to prove that Tyagaraja was responsive to the Muslim invasion, British rule etc., in an indirect way, appealing to Rama to put an end to the suffering of people. This has never been brought out by other biographers who portray Tyagaraja as a person untouched by the joy or misery of his fellow human beings.

The fourth chapter has a brief introduction to Carnatic Music in general and its musical forms and stresses on the "bhakti" aspect of Carnatic Music. These four chapters conclude the first part.

The second part contains the English translation of 160 of Tyagaraja's compositions. These translations are based on the authoritative versions accepted by scholars over the past few decades. Fortunately for us, the compositions of Tyagaraja written in palm leaf manuscripts by his disciples are still available and the variations noted by different schools (Umayalpuram, Tillaisthanam, Walajapet) are not very significant.

This book is a product of painstaking study and scholarship. It can only be called a labour of love and a homage to one of the great sons of India by a western scholar of religion interested in Indian music. The printing and the layout are excellent and the proof-reading perfect. The reviewer could not find a single misprint.

---

THE VARNAM (A special form in Karnatak music) by Lalita Ramakrishna, Harman Publishing House, New Delhi, 1991, Rs. 380.00 (In English).

---

As the title indicates, *varnam* is special to Karnatak music in the sense that there is no similar musical form in Hindustani music, although in recent times Pandit Ratanjankar had composed some lyrics with the notation identical to the *varnam*-s. The *varnam* also plays a special role in Bharata Natyam as an important item in performances.

Nowadays there has been a revival of interest in understanding the evolution of musical forms, the stylistic analysis and other musicological aspects both among the *rasika*-s and among the performing musicians. The book under review serves the purpose of a reference-volume very well. So far books on *varnam* were only compilations of *varnam*-s of different composers without any reference to the musicological aspects dealt with by musicologists only in seminars, conferences, doctoral theses or textbooks. The author has collected and arranged the relevant material so that one gets a very clear picture of *varnam* in musical performances over a period of time.

The book consists of two parts, the first part has seven chapters which deal with the history, etymology, evolution, different types of *varnam*, their stylistic analysis and the future of *varnam* respectively, while the second part has Appendices which consist of notes, references, texts of some rare *varnam*-s and some *varnam*-s of doubtful authorship. The second part will be of great use to researchers and performing musicians.

Just to give one example of the author's painstaking effort in her study, we find in detail different aspects of *tana varnam* like *ragasvarupa*, *tala*-s, structural and stylistic analysis of different composers. Being an expanded version of a master's dissertation of the Faculty of Music, Delhi University, the author has noted views of many musicians and music scholars and summarised them. She has also dealt with certain problematic areas which give further scope for research in this field.

—PADMA RANGACHARI

---

BRIHADDESHI OF SHRI MATANGA MUNI edited by Prem Lata Sharma and assisted by Anil Bihari Beohar. Published by Indira Gandhi National Centre for the Arts in association with Motilal Banarsidass Publishers Pvt. Ltd., New Delhi, 1992, Rs. 275.00 (In English).

---

Dr. Prem Lata Sharma who has been rightfully awarded a Fellowship by the Sangeet Natak Akademi for her musicological achievements has aroused great academic expectations by bringing out the first volume of the proposed three-volume edition of *Brihaddeshi* by Matanga Muni. *Brihaddeshi*, unlike *Natyashastra*, is solely devoted to music. Secondly, it deals with the secular and regional traditions of ancient music in contrast with Kohala's *Dattilam* which focussed on *margi* music representing the sacred stream of music in the early India. Even though the sacred—secular demarcations became blurred over the ages, they were musical realities at one point of time and continued to have influence on the later centuries. Hence the relevance of studying classics such as Matanga Muni's.

In the absence of complete and numerous manuscript-sources, Dr. Sharma has been compelled to accept the challenging task of reconstructing the entire text by collating citations of *Brihaddeshi* scattered in works spread over a period of nearly eight centuries. Dr. Sharma has borne the responsibility in the proven tradition of textual criticism.

The first volume covers the first chapter of *Brihaddeshi* dealing with the seminal themes identified in the scholastic tradition as *Desi*, *Nada*, *Sruti*, *Svara*, *Gramamurchana*, *Varna-alankara* and *Padagiti*. In the volume, variants are carefully noted, sources are meticulously indicated, inevitable additions marked off, thematic regrouping is carried out wherever essential, prose-portions are split contextually, diagrammatic presentations are improved upon and translation is undertaken with rare intellectual rigour. Dr. Sharma has also taken a pre-emptive step in cautioning critics of the translation-aspect by stating that her attempt is to "bring the original to the reader with its flavour and nuances" (p. xiii). As the editor's critique is to follow in the final volume, the present volume can hardly be reviewed properly. However certain observations may be made, if only to indicate how successfully Dr. Sharma's effort provokes one to think about a masterpiece.

In some places Dr. Sharma's translation displays a kind of looseness of texture. For example the words in the editor's version (given in bold by the reviewer) do not have a matching word in the original:

- "...the intense course of *nada*." (p. 7)
- "...the beautiful origin of *nada*." (p. 9)
- "...in steps of a ladder-like smoke..." (p. 9)
- "...The *prastara* (chart)..." (p. 17)
- "...the refutation of (these) alternative(s)." (p. 19)
- "...demonstrate with *prastara* (visual representation)." (p. 25)
- "...It produces the *ragatva* of *raga*." (p. 33)
- "...*tana-vidhana* (performance of *tanas*)..." (p. 81)
- "...*sthavin* (steady)." (p. 85)

"...constructors..." (ref. *geetyojaka*)..." (p. 89)  
"...*prastaras* (notational representations)..." (p. 115)

In a couple of places terms are not translated i.e. they are omitted:

*dooshanan* (p. 18), *koshtha* (p. 54), *pavananiroddhen* (p. 92), *urogata* (p. 108) and *kanthe* (p. 108).

I could detect only one printer's oversight! (*tattya* instead of *tatva*—p. 123).

*Brihaddeshi* excites because it is lucid and grapples with the issues without wasting verbiage! It will be instructive to read Dr. Sharma's critique and especially her reasoned answers to some of the queries which the first volume suggests. For example:

1. What, according to *Brihaddeshi*, was the logical sequence in the chain leading to vowels and consonants from *bindu*?
2. What was the relationship between the views on sound propounded by the grammarian-philosophers in India and *Brihaddeshi*?
3. To what extent the human voice and voice-production (as contrasted with *vina* and *vina*-music) were held to be coextensive with music as a totality and why?
4. Is it possible to account for the differences of interpretation between Bharata (whom *Brihaddeshi* quotes) and Matanga—especially in respect of the *alankara*-s?
5. Why Matanga falls back repeatedly on 'uncommonness' as a distinguishing criterion in contexts of musical phenomena?

The third volume of *Brihaddeshi* is surely and eagerly awaited!

—A.D.R.

## N.C.P.A. NEWS

Since the last issue of the N.C.P.A. Journal was brought out, two more activities have been added. Brief information is given below.

### CENTRE FOR PHOTOGRAPHY AS AN ART-FORM

The Centre for Photography as an Art-Form (CPA) was inaugurated on 21st January, 1988. The CPA is expected to fill a major lacuna in the development of fine-art photography in India. The main thrust of the CPA is to focus exclusively on the 'art' aspect of photography as against its commercial applications or its techniques.

- \* Piramal Gallery of CPA is the venue for exhibitions of the works of outstanding or talented Indian and foreign photographers. The Gallery also offers opportunities to promising though less-known Indian photographers to exhibit work through group and one-man shows.
- \* The CPA conducts workshops and seminars focussing on the appreciation of art photography.
- \* One of the long-term objectives of the CPA is to house a permanent seminal collection of photographs in its Archives. At present, the CPA Archives comprises of a collection of about 600 original photographs of the past and present leading photographers from India and abroad.
- \* The CPA also aims at building up a well-selected slide library as well as a library of books on photography.

—PRAFUL PATEL

## MOHILE-PARIKH CENTRE FOR THE VISUAL ARTS

The National Centre for the Performing Arts made a significant addition to its varied activities by establishing the Mohile-Parikh Centre for the Visual Arts (MPCVA) on 10th January, 1990.

The primary objective of MPCVA is to facilitate a more systematic and planned development of knowledge, talent and skill in the field of contemporary Indian visual arts, especially painting, sculpture and graphic arts. To achieve this end the MPCVA proposes:

1. To organise, periodically, seminars, workshops, round-tables, conferences as well as special educational and training modules for
  - \* generating public awareness about modern Indian art and artists
  - \* for cultivation of conceptual insights and deeper sensitivities in art students
  - \* for facilitating a continued interaction among artists, art teachers and art critics.
2. To encourage and undertake research in all relevant aspects of contemporary Indian art.
3. To develop and maintain an up-dated comprehensive library and archives of books, slides, video tapes and films.
4. To publish suitable monographs, books and periodicals.
5. To organise, periodically, exhibits of Indian painting and sculptures and to participate in international art events.
6. To develop national and international linkage with appropriate individuals and institutions to help the development of MPCVA into a centre of scholarship and excellence in the field of visual arts.

—SHAILA PARIKH

look into this matter and do the needful so that the Muslims regain their confidence in the secular system of our country.

V. M. Khaleelur Rahman, Madras.

### Spirit of give and take

Sir. — In his letter, "SC verdict on Ayodhya" (*The Hindu*, Nov. 16), Mr. G. Azeemuddin has rightly established that controversies of the Masjid-Mandir type can never be resolved by "judgments of courts and commandments of Governments" and that for the preservation of secularism, an enlightened population and a spirit of give and take are essential.

Will the political pandits, journalists and the Governments concerned keep their hands off the problem and allow the Muslims and Hindus of Ayodhya to find their own solution?

The Kanchi Paramacharya had proved that a mosque and a mutt can co-exist side by side. That probably explains why the Muslims of the locality paid their obeisance when the sage attained Mahasamadhi.

7-12-94 S. Santhanakrishnan, Madras

### Tonal quality of tanpura

Sir. — Dr. B. C. Deva, in an article on "The tonal structure of the tanpura" (*Sangeetha Kalavihar*, 1960), has indicated the approximate results of the calculation of the inharmonics by the method of weighted means, calculated from the non-linear transformation of the 'subjective tones.' He has attempted to bring into relief 'tonal memory' and 'tonal-retro-relation' in music. He has indicated that the bridge contact is very significant. Earlier C. V. Raman tried to establish it from the point of view of physical cause for the

tonal structure of the tanpura.

C. R. Sankaran and K. S. Sampath have discussed the 'emotional content' of a 'note' in music (*Postulational method of Indian Musicology*, Journal, University of Bombay, 18, 1949). In this paper, they have stated that "The immediate background of a 'note' comprises the Drone (Tanpura) and the musical environment."

In a tanpura, we include Sa and Pa (Ma) with full overtone structure arising from these. The background created by the manual tanpura is extraordinarily rich in such tones. This is missed in an electronic gadget. The emotional value of a 'note' is in part determined in accordance with the degree of dissonance between it and the drone.

The very close analogy between human voice mechanism and the tanpura is well brought out by C. R. Sankaran (*Process of Speech*, Deccan College Monograph series, 27, 1963, P.25). Evidently, the efficacy of the electronic gadget is yet to be 'scientifically established'. Tradition still seems to hold its head aloft!!

T. V. Kuppuswami, Delhi

### Punctuality

Sir. — This has reference to Ms. Rajeswari's letter (*The Hindu*, Nov. 29) regarding the East-Coast Express. In the case of the Navjeevan Express too, on no single day in a year, has it maintained punctuality. The Railway Administration pays no attention to this and the passengers have become tired of representing to the authorities on the late running.

Baby Sundaram, Bangalore